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MODERATING EFFECT OF CAPITAL BUFFER ON REGULATORY REQUIREMENTS AND PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA.

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ABSTRACT

The banking system performs the basic function of financial intermediation and represents the engine of economic growth as it ensures efficiency in promoting economic activities. However, some banks have been experiencing diminution in the capital base due to poor portfolio performance which is attributable to their huge non-performing loans and its attendant high loan loss provisions that are negatively affecting their bottom line and level of capitalization. Meanwhile, the levels of equity capital and liquidity demanded by regulators continue soaring turning regulation to a strategic consideration for banks. This study adopted *an ex post facto* research design. Validated data used for the study was extracted from audited financial statements of ten (10) Deposit Money Banks in Nigeria and made use of pooled and panel regression to analyze the data. Following the ρ-value of F-statistics of 0.00, and adjusted R-squared of 0.2115, this is significant because it is less than the chosen significance level of 5%. It is evident that the capital buffer significantly moderates the relationship between regulatory requirements and the performance of selected deposit money banks in Nigeria.

Key Words: Capital buffer, Regulation, Performance, Non-performing loan, Loan loss provision.

Introduction

Banking industry across the world have been experiencing cycles of distress and reforms while several regulatory policies put in place by monetary authorities to resolve the impasse not effectively being complied with, as banks are still battling with negative capital base due to the diminution of assets caused by growing non-performing loans, increasing loan loss provisions that reduce profitability, poor asset/liability management skills, and contraventions of regulations among others. According to AlKulaib, Almudhaf, and Al-Jassar, (2013), the financial crisis of 2008 had its negative impact on the banking industry and many investors and depositors began to worry about their investments and deposits, hence the evaluation of bank performance becomes important for depositors, investors, managers, and regulators as the impact of the crisis that originated in the United States and the Eurozone has hit the rest of the world.

The banking system in Nigeria has witnessed series of issues and challenges which range from banking consolidations, the global financial crisis in 2007/08 as well as bank recapitalization and of recent, ever-changing Nigerian government policies (Saheed, 2018). The performance and growth of banks in Nigeria have been hindered as their ability to create credit is restricted. Thus, Ahmad (2018) stated that bank lending to the private sector is known to stimulate economic growth and development; however, this has remained low over the years in Nigeria despite increased deposits mobilization. Besides this, the excessively high level of non-performing loans in the banks can hinder their ability to create credit in the long run.

The issue as to whether existing levels of capital buffers are considered adequate for the increasing levels of risks taken by DMBs has been an issue of debate between bankers and the supervisory authorities thus, Aiyari, Calomiris and Wiefadek, (2015) stated that the global banking crisis of 2007-2009 revealed that many of the largest financial institutions in the world had been financing extremely risky mortgage lending and other activities and when losses arose the amount of equity finance used by those institutions like a buffer that is supposed to absorb bank loan losses but proved inadequate. Also, (Deloitte, 2015) stated that the levels of equity capital and liquidity demanded by regulators continue soaring turning regulation to a strategic consideration for banks. In the process, boards and senior management have continued to be held to account for the consequences of their actions and inactions.

A bank regulatory requirement is to promote the stability and soundness of the financial system, but compliance must be measured credibly enforced and requirements should be commensurate with risk. (Aiyar, Calomiris & Wieladek, 2015). Similarly, Okoye, *et al* (2016) posits that a major fall-out of the capital reform was the fusion of 25 out of the 89 banks that were in

operation before the reform date through mergers and acquisitions. However, 14 banks which could not recapitalize within the stipulated period had their operating licenses withdrawn. The exercise led to a phenomenal increase in the operating fundamentals of banks in the immediate post-implementation period but this initial success was not sustained as barely three years post-consolidation, the sector relapsed into severe deterioration in asset quality, the rising level of non-performing loans, erosion of capital base and liquidity stress. Also, Olokoyo (2012) asserted that financial crisis in most cases does precipitates runs on banks when banks and their customers engage in massive credit recalls and deposit withdrawals which sometimes necessitate CBN liquidity support to the affected banks. Therefore the objective of this study is to assess the moderating effect of capital buffer on the regulatory requirements and performance of Deposit Money Banks (DMBs) in Nigeria.

Hypothesis Development

Studies by Stoltz and Wedow (2011) reported that capital buffer and business move counter-cyclically. One other study by Jokipii and Milne (2008) report that as credit risk moves in a different direction of the economic cycle, the similar move in capital buffers is the proof that the banks are not futuristic for gathering capital when the economy is in the boom so that they can survive during downturns. Recently, Islam and Nishiyama (2016) suggest that equity capital has a positive impact on the profitability of South Asian commercial banks. Tran et al. (2016) conclude that capital and performance do not have a linear relationship. They document an inverse relationship in capital and profitability of larger banks and a positive relationship in smaller banks. Lee and Hsieh (2013) states that the capital and profitability of commercial banks in Asian countries have a positive relationship. Athanasoglou, Brissimis, and Delis (2008); Flamini and Schumacher, (2009) favour the positive impact of bank capital on the profitability of banks. However, Boyd and Runkle (1993), Micco, Panizza, and Yanez (2007), M. E. Francis (2013), and Naceur (2003) concluded a negative relationship between bank capital and profitability. Significantly, the condition imposed by regulators to hold a higher amount of equity capital is found to enhance the risk absorption capacity of banks in earlier studies such as Aggarwal and Jacques (2001) and recent studies such as Ng and Roychowdhury (2014). Barth, Caprio, and Levine (2008) and Berger and Bouwman (2013) argued that the impact of regulatory capital on bank profitability is yet not clear, this study therefore hypothesized that the moderating effect of the capital buffer has no significant relationship with regulatory requirements dimensions and bank performance in Nigeria.

Scope of the Study

The study focused on the ten (10) banks used for the study out of 21 DMBs licensed as at December 2018 that were quoted on the Nigerian Stock Exchange (NSE) and also operating as international banks and also controls over 60% of the assets and liabilities of the banking industry, hence any form distress impasse or crisis that may befall any these banks very negative on the economy. The unit of analysis for the study was the audited financial statements of accounts from 2007 to 2018 as approved by CBN for the ten (10) DMBs. Hence, the population of the study was ten (10) deposit money banks times (x) 12 years for the study, thus making 120 samples.

Review of Literature

Bank Performance

Different stakeholders of a bank see a performance from different perspectives. Depositors are more likely to be concerned with the bank's long-term capability to insure their savings, equity investors are concerned about bank's profitability while creditors pay more attention to how the bank can repay its financial obligations (Otieno and Onditi, 2016). Thus Bassey, Tobi, Bassey, and Ekwere (2016) posit that finance in a banking system is as important as blood in the human system and adequate circulation of it in the body means the human system will function well resulting into good health while its inadequacy will also mean that human system will be weak. Sentero (2013) asserted that the regulatory framework in Kenya affects the performance of banks in Kenya because of its complexities which also hinders bank performance. In principle, the bank focuses on the use of loan loss provisions (LLP) as a management macro-prudential surveillance tool to mitigate credit risk, which in return requires them to set aside sufficient additional buffers of reserve funds as a cushion to absorb anticipated future expected losses lurking in a bank's loan portfolio Laeven and Majnoni (2003) even before the actual loss can be determined with accuracy and certainty, while unexpected losses have to be cover by bank capital (Dushku, 2016).

Regulation

The expected deterioration in the regulatory capital or CAR of banks under IFRS 9 is a key channel through which financial stability will be (negatively) impacted. It has been argued, though, that other dimensions of IFRS 9, such as higher provisioning, the possible reduction in pro-cyclicality, and improved credit risk management would, in the long-run, enhance financial

stability. The timeline over which these impairments and regulatory capital will take place will influence the nature of the impact on the financial system (FRS, 2018).

Furthermore, during recessions, relaxing prudential regulation on macro-prudential grounds to stimulate lending and encourage investment is likely to be destabilizing. The tolerance for inadequate capital ratios of troubled lenders is already the all-too-common discretionary reality known as forbearance, which is usually accomplished through lax recognition of loan losses (Huizinga & Laeven, 2012). The unprecedented severity of many recent banking system disasters of the past three decades can be traced to relaxing regulatory standards in the name of preserving bank lending during contractions (Calomiris & Haber, 2014).

Capital Buffer

The 1952 Banking Ordinance imposed minimum requirements for paid-up capital and the establishment of reserve funds. This was followed by the enactment of the 1958 Central Bank Act and the Banking Ordinance of 1959. The banking legislation was further strengthened with the enactment of the Banking Decree of 1969 (Chude & Chude, 2014). A capital requirement is the amount of capital a bank or another financial institution has to hold as required by its financial regulator. This is usually expressed as a capital adequacy ratio of equity that must be held as a percentage of risk-weighted assets. These requirements are put into place to ensure that these institutions do not take on excess leverage and become insolvent. Capital requirements govern the ratio of equity to debt, recorded on the liabilities and equity side of a firm's balance sheet. They should not be confused with reserve requirements, which govern the assets side of a bank's balance sheet, in particular, the proportion of its assets it must hold in cash or highly-liquid assets (Wikipedia, 2014). Capital buffer is defined as the Basel capital to risk-weighted capital ratio minus the regulatory requirement (Jokipii & Milne, 2008; & Shim, 2013). Banks are expected to operate above the minimum regulatory capital ratios and should have the ability to hold capital above the minimum statutory capital requirement. Supervisors can ensure that banks operate with an additional capital by (i) placing reliance on a bank’s internal capital assessment if developed and adequate; (ii) establishing trigger and target ratios (e.g UK model) (Ogundipe, 2019). The high level of bank capital boosts the confidence and trust of the public about the soundness of the bank. Stronger banks can channelize available funds in business activities and make high profits (Pasaribu and Sari, 2011). Buffers are a way to insure against a violation in regulation that may occur due to a sudden loss. Buffers also can insure against changes in requirements if the requirement is increased, banks can draw on their buffers to satisfy part of the increased requirement. Minimum equity-to-asset ratio requirements will only have a binding

effect on banks' behaviour if they are set above the level that banks would otherwise choose voluntarily, based on managerial reactions to market discipline. Even when equity requirements are binding, banks will still set their actual ratios above the minimum requirement (Aiyara, Calomiris & Wieladek, 2015). Further, Dwyer (2011) posits that capital acts not only to provide financial institutions with the liquidity necessary to take advantage of opportunities but also as an important buffer in case of distressed asset values. Historically capital levels were much higher when there was no clear lender of last resort. Bank capital in the 1800s typically ranged from 20% to 50% of assets, much higher than the approximately 10% that is seen recently. Further, Lambert (2016) stated that the countercyclical capital buffer is one of the new macro-prudential tools available to regulators to mitigate cyclical systemic risks and to support the provision of credit through the cycle. Capital buffers are meant to be imposed when there is an increase in cyclical systemic risks and are meant to be eased when the cycle turns and risks decline.

Also, under CRD IV banks are meant to accumulate sufficient capital during periods of economic growth to absorb losses in stressed periods, strengthening the resilience of the banking sector and the financial system to potential downturns. The countercyclical capital buffer is one macro-prudential tool available to regulators that can be used to curb high credit growth and to mitigate the risk that financial imbalances trigger or amplify an economic downturn (Theodore, Lambert & Ramano, 2016).

On a broader level, we question whether banks can effectively use the capital buffers as they are in effect macro-prudential measures employed by regulators to address specific risks. Further, under CRD IV if a bank breaches the combined buffer, it faces restrictions on the discretionary distributions (e.g. dividends and AT1 coupons). However, as these risks diminish or increase the buffers should do the same. With the countercyclical buffer being determined quarterly, this is one buffer in which national authorities should be able to adjust more readily (Lambert, 2016).

Countercyclical buffer to help maintain the flow of credit per CRD IV, financial institutions should accumulate a sufficient capital base to absorb losses in stressed periods. It is our understanding that the capital conservation buffer was designed to ensure that banks do not breach their minimum capital requirements in a period of stress. Besides, the countercyclical capital buffer should be built up "when aggregate growth in credit and other asset classes are judged to be associated with a build-up of system-wide risk. During a stress period, the countercyclical buffer could then be reduced to maintain the flow of credit in the economy (Lambert, 2016). The social costs of raising minimum equity ratio requirements consist of two types; (1) those borne within the financial system, including inefficiencies in the operation of

banks, and diminished wealth of bank stockholders when equity capital ratios are required to be either too low or too high and (2) costs borne by the non-financial sectors especially by would-be bank borrowers if excessive equity requirements result in reduced lending (Aiyara, Calomiris & Wieladek, 2015). Lambert (2016) observed that systemic buffers for mitigating non-cyclical systemic and macro-prudential risks in addition to the capital conservation and countercyclical capital buffers, national authorities can use systemic buffers to prevent and mitigate long-term non-cyclical systemic or macro-prudential risks. Systemic buffers include additional capital buffers for global and other systemically important institutions (G-SIIs and O-SIIs, respectively) and the systemic risk buffer.

2.2. Empirical Findings Review

Capital Buffers and bank performance

In a study of German banks, Stolz and Wedow (2011) analyzed the bank's extra capital and the cycle of an economy. The results of their research show that for the banks with low capital, the reduction in risk is not in risk witnessed in comparison to the ones with higher capital. Jokipii and Milne (2010) studied US banks in their research and found that there is a positive link between capital buffers and risk adjustment. Fonseca and Gonzalez (2010) examined a dataset of 70 countries and found that the greater the market power the banks have and the greater the costs of deposits they go through, they will have higher levels of a capital buffer. They further found that this association is influenced by the regulatory environment of the country. There was mixed evidence concerning the stabilizing effects of higher capital, or higher capital requirements which reflects some combination of (a) errors in measuring true capital due to Underestimation of tangible asset losses Huizinga and Laeven (2012) (b) errors in measuring true capital that reflect deficiencies in the reliance on book capital ratios, which do not incorporate the effects of cash flows not captured by accounting for tangible assets and (c) differences in asset risk that may adjust endogenously to offset or magnify the otherwise stabilizing effects of higher capital. Also, Acharya, Engel, and Pierret (2013) apply their "SRISK" model to evaluate the adequacy of prudential regulatory requirements of U.S. and European banks in their study found that banks remain quite risky, especially in Europe. Douglas (2014) asserted that capital requirements for banks and the rules governing the resolution of insolvent banks will affect liquidity requirements. The level of bank capitalization will influence the liquidity position of such banks and affect public confidence on the banks. That low capitalization will harm their liquidity and level of transactions. Unaeze (2012) explained that there are some extra measures adopted by the Central Bank of Nigeria to foster safe sound banking culture while also serving as tools to correct

unusual and very serious anomalies detected by the apex bank. These are mandatory for all banks to comply to retain the confidence of the stakeholders and maintain sustainable performance and growth of the banks.

Theoretical Review

The buffer theory was propounded by Calem & Rob (1996). The theory postulates that banks may prefer to hold a 'buffer' of excess capital to reduce the probability of falling under the legal capital requirements, especially if their capital adequacy ratio is very volatile. This is to hedge against prolonged under capitalisation and avoid sanctions and possible closure by the regulatory authorities which consider the breach of the capital requirements as a major infringement of banking legislation. Buffer theory is anchored on the volatility of capital adequacy ratio as well as reliability and dependability on capital for long term planning, however, its weakness is that most banks don't just rely on capital adequacy alone for their sustainability but on their capacity to mobilize deposits from customers and also earn adequate returns on their investments.

Methodology

The research design adopted is *ex post facto* which established the moderating effect of capital buffers on regulatory requirements and performance of the banks under this study The ten (10) banks used for the study are; United Bank for Africa (UBA), Guarantee Trust Bank (GTB), Eco Bank Transnational Incorporated(ETI), First Bank of Nigeria (FBN), Access Bank, Stanbic Bank, Fidelity Bank, Zenith Bank, First City Monument Bank (FCMB), and Union Bank of Nigeria (UBN).

Method of Analysis

The study employed a quantitative method of analysis with the aid of STATA Statistical package software and made use of pooled and panel regression panel least square (PLS) estimation of regression analysis. Descriptive analysis of mean, maximum, minimum, skewness, kurtosis, and probability of Jarque-Bera statistic for the secondary data was done and the Hausman test was conducted. Also, the hypotheses in this study were analyzed using simple, multiple, and moderating regression method of analysis wherein tests were conducted at a 5% significance level.

Operationalisation of Variables

$BP = f(CB)$; $BP_{it} = f(RR*CB)$; $BP_{it} = \beta_0 + \beta 1RRit + \beta_2 CB_{it} + \beta_3 RR*CB + e_{it}$

Hypothesis: Moderating Effect of Capital Buffer on the Regulatory Requirements and Performance

Method	**PCSE**		
Variables	**Coeff**	**z-stat**	**Prob**
REGREQ	0.166602	2.28	0.023
CB	0.015168	0.37	0.715
Z	0.0116598	0.16	0.872
Constant	0.0064741	0.11	0.914
R-squared = 0.0169, Wald $chi^2(1) = 4.92$; Prob > $chi^2 = 0.0265$			
Hausman Test: $Chi^2_{(3)} = 0.41$ Prob.> $chi^2 = 0.9385$			
Breusch-Pagan LM Test: $Chi^2_{(1)} = 28.29$, Prob.> $chi^2 = 0.0000$			
Breusch-Pagan/ White Test: $Chi^2(2) = 0.9729$ Prob.> $chi^2 = 0.9729$			
Wooldridge Test: $F_{(1, 9)} = 5.119$, Prob >F = 0.0500			
LRAI Test: R-Squared = 0.2910, Adjusted R-Squared = 2115 ; F(9, 109) = 4.582 , Prob > F = 0.000			

Dependent Variable: Performance (Perf) **Significance @ 5%**

Interpretation

The Hausman result shows that the random-effects model is the best estimate considering the probability value of 0.9385 which is greater 0.05 significant level; also, the LM test confirmed the result of Hausman that random effect existence with a significant ρ-value of 0.00. Breusch-Pagan/ White Test revealed that there is no heteroskedasticity problem in the model looking at the ρ-value of 0.9729 being insignificant as the null hypothesis specifies that the model is homogeneous; but the result of the serial correction conducted using the Wooldridge test with the ρ-value of 0.05 showed that the study could be indifferent with the result, being exact 0.05, so there is a tendency of the model possessing serial correlation problem; thus Panel-Corrected Standard Errors (PCSE) was conducted to correct the errors. Also corrected R-Squared and Adjusted R-squared was calculated using Linear Regression for Absorbing Indicators (LRAI).

The probability and the sign of the z-statistics as presented in Table 4.3.6 showed that regulatory requirements (REG REQ) with z-statistics of 2.28, which is positive and a ρ-value of 0.023, which is less than the chosen significance level of 5%, indicates that REG REQ has a significant positive effect on Performance (Perf). Interpreting the coefficient of REG REQ (0.1666), it implies that a naira increase in REG REQ would lead to ₦0.1666 increase in Performance. Also, Capital Buffer (CB) with z-statistics of 0.37, which is positive and ρ-value of 0.715, which is greater than the chosen significance level of 5%, evidenced that CB has an insignificant positive effect on Performance (Perf); likewise, the Moderating Variable (Z) having z-statistics of 0.16, which is positive and ρ-value of 0.872, which is greater than chosen significant level of 5%, evidenced that W has an insignificant positive effect on Performance (Perf). Following the ρ-value of F-statistics of 0.00, which is significant because it is less than the chosen significance

level of 5%, it evidenced that Capital Buffer significantly moderates the relationship between Regulatory requirements and Performance (Perf) of selected deposit money banks in Nigeria. The value of adjusted R-squared of 0.2115 explains the power of the explanatory variables which simply means that a variation in the combined powers of the explanatory variables (REG REQ, CB, and Z) would lead to a 21.15% variation in the explained variable, that is, Performance (Perf), while the remaining 78.85% changes that could occur in Performance (Perf) resulted from other factors that are not captured in this model.

Decision

Therefore, the null hypothesis which states that there is a significant moderating effect of capital buffer on the relationship between regulatory requirements and bank performance of selected deposit money banks in Nigeria is hereby rejected while the study accepted the alternate hypothesis that there is the significant moderating effect of capital buffer on the relationship between regulatory requirements compliance and bank performance of selected deposit money banks in Nigeria.

Discussion of Findings

The result confirmed that banks are building up their tier 11 capitals to provide a buffer to mitigate incidents of distress and to provide further cover for assets diminution that may be caused by persistent losses over time. This is supported by various studies on recapitalization and consolidation exercises that took place in Nigeria between 2004 -2005. This was followed by another round of banking crisis within a space of time in 2009 that informed the need by the CBN to introduce Tier 11 capital. Okey & Ihenacho, (2017) posited that the average capital base of Nigerian banks prior to consolidation was $10 million which was very low compared to banks in other developing economies like Malaysia where the capital base of the smallest banks is $526 million. In the same vein, the aggregate capitalization of the Nigerian banking system stood at N311 billion ($24 million) which is grossly low about the size of the Nigerian economy, and concerning the capital base of $688 billion for a single banking group in France and $541 billion for a bank in Germany. Landier *et al* (2015) also in their study found out that on average, in contrast to changes in economic capital caused by realized interest rate risk exposure, no evidence changes in excess liquidity significantly affect bank lending. The result also showed that liquidity buffers were large and that most banks did not experience any strains on liquidity over the sample period. Corroborating this using Nigeria's situation, despite huge liquidity buffers on the books of deposit money banks, several banks were either forced to merge using acquisition and bridge banks or have their licenses revoked out rightly due to insolvency usually

caused by the diminution of capital and assets value of the bank. Furthermore, the unprecedented severity of many recent banking system disasters of the past three decades can be traced to relaxing regulatory standards in the name of preserving bank lending during contractions (Calomiris & Haber, 2014). Also, the expected deterioration in the regulatory capital or CAR of banks under IFRS 9 is a key channel through which financial stability will be (negatively) impacted. It has been argued, though that other dimensions of IFRS 9 such as higher provisioning, the possible reduction in procyclicality, and improved credit risk management would, in the long-run, enhance financial stability. The timeline over which these impairments and regulatory capital will take place will influence the nature of the impact on the financial system (FRS, 2018). The result supports the hypothesis that the moderating variable significantly affects the performance of deposit money banks in Nigeria.

Implication of Findings

Banks may prefer to hold a 'buffer" of excess capital to reduce the probability of failing under the legal capital requirements, especially if their capital adequacy ratio is very volatile. This will help banks to avoid capital erosion through the accumulation of losses and diminution of assets value which may be caused by non-performing credits and reduction of profits due to loan loss reserves thereof.

Conclusion and Recommendation

It can therefore be concluded that any deterioration in the regulatory capital or capital asset ratios (CAR) of banks as referred under IFRS 9 will constitute a key channel through which financial stability will be negatively impacted. The Central Bank of Nigeria must continue to appraise and review the bank's capital base to ensure adequate coverage of the assets and liabilities of banks to prevent the incident of distress syndrome while maintaining the safety and soundness of the financial system. Globally, retained earnings have been identified as an important source of growing an institution's capital. Banks should therefore take advantage of this beneficial means of capital generation as some institutions pay out a greater proportion of their profits as dividends irrespective of their risk profile hence, the need to build resilience through adequate capital buffers. Therefore it is recommended that banks should continue building up their Tier 11 capitals (CAR) to provide a buffer to mitigate incidents of distress and prevent assets diminution that may be caused by persistent losses over time**.**

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